

PATENT COOPERATION TREATY

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From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2005/007581

International filing date (day/month/year)
08.03.2005

Priority date (day/month/year)
16.12.2004

International Patent Classification (IPC) or both national classification and IPC
C04B28/02, C04B28/14, C04B41/62

Applicant
JAMES HARDIE INTERNATIONAL FINANCE B.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/007581

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2005/007581

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	6,7,12,15,19-21,23,25,31,38,54
	No: Claims	1-5,8-11,13,14,16-18,22,24,26-30,32-37,39-53,55
Inventive step (IS)	Yes: Claims	
	No: Claims	1-55
Industrial applicability (IA)	Yes: Claims	1-55
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

- D1: US 2002/0069791 A
- D2: US 3 998 944 A
- D3: US 5 421 867 A
- D4: US 6 475 275 B
- D5: A.D. Shapiro et al., Bumazhnaya Promyshlennost 36, 12 (1961), see the abstract from Chemical Abstracts
- D6: JP 61 019 900 A (see also the abstract from WPI)
- D7: JP 55 085 756 A (see also the abstract from Chemical Abstracts, JP 80 85,756)
- D8: JP 3 016 978 A

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-5,8-11,13,14,16-18,22,24,26-30,32-37,39-53 and 55 is not new in the sense of Article 33(2) PCT for the following reasons:

2.1 Document D1 discloses in claim 1 a composite building material comprising a cementitious matrix and cellulose fibres incorporated into the cementitious matrix, wherein the cellulose fibres are treated with a biocide. The fibre cement formulation D disclosed in table 1 comprises 8% of fibres containing 0.5% copper oxene. This material is used for roofing products, pipe products and walling products for siding (panels and planks) and tile backer wet area lining boards (see paragraphs [0008] and [0016]). The process for manufacturing the building material comprises forming a green shaped article followed by autoclave curing (see paragraph [0082]).

The subject-matter of claims 1,2,8,9,13,14,16,26-30,32-35,39-42,44-47 and 49 is thus not new compared with D1.

2.2 Document D2 discloses s fungicidal paper cover sheet for gypsum wallboard, the

paper cover sheet having a coating comprising copper-8-hydroxyquinoline (see claims 1 and 2).

The subject-matter of claims 1-4,9-11,13,16-18,22,24,34-36,39-41,43 and 44 is thus not new compared with D2.

2.3 Document D3 discloses in column 5 in lines 20-43 the incorporation of copper-8-quinolinolate into a cementitious backerboard reinforced with glass fibre mesh. According to claim 2 the copper-8-quinolinolate is present in the cementitious composition in an amount of from 0.25 to 0.5% by weight on a dry basis.

The subject-matter of claims 1,2,8,9,13,26,27,29,30,34,35,39-42,44-47 and 49 is thus also not new compared with D3.

2.4 Document D4 discloses cement compositions comprising cellulose fibres and copper-8-quinolinolate (see example 1, column 4, lines 23-25, and column 2, lines 50-51). The composition can be used as coating for construction surfaces such as steel beams (see column 4, lines 36-38).

The subject-matter of claims 1,2,9,16,26,27,34,35,39-41 and 45-47 is thus also not new compared with D4.

2.5 Document D5 discloses the fabrication of hardboards resistant to biological degradation by impregnating the finished board with a 4-5% solution of copper-8-hydroxyquinoline.

The subject-matter of claims 1-5,9,13,14,17,18,24,34-37,39-41,42-44,50 and 51 is thus not new compared with D5.

2.6 Document D6 discloses in the WPI abstract a mildew-proof gypsum whisker board, which is impregnated with a mildew-proofing agent and copper powder in an amount of 0.05-1%.

The subject-matter of claims 1-5,8,9,13,14,17,18,22,24,34-37,40-45,47 and 49 is thus also not new compared with D6.

2.7 Document D7 discloses in the abstract from Chemical Abstracts mould resistant building materials. Asbestos cement boards are coated first with an inorganic material containing a copper ion generating agent, e.g. 0.2% Cu powder, spray-coated with

coloured sand containing 0.2% Cu powder and coated with an acrylic resin emulsion. The subject-matter of claims 34-37, 40-42, 44-50, 52, 53 and 55 is thus not new compared with D7.

2.8 Document D8 discloses a cement building board coated with a cement composition comprising 2-10 parts by weight of glass powder containing 0.5-2.0 parts by weight CuO or Ag₂O powder having antifungal properties.

The subject-matter of claims 45 and 47-49 is thus also not new compared with D8.

3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 6, 7, 12, 15, 19-21, 23, 25, 31, 38 and 54 does not involve an inventive step in the sense of Article 33(3) PCT for the following reasons:

3.1 The difference between the subject-matter of dependent claims 6 and 7 and the disclosure of D7 is that D7 uses a Cu ion generating agent, which in the example is Cu powder, while in present claims 6 and 7 copper oxine is used. It is however obvious for the skilled person from the disclosure of D5 that copper oxine can be used as biocide in compositions for treating alkaline building materials. The skilled person would thus combine the disclosure of D7 and D5 to arrive at the subject-matter of claims 6 and 7.

3.2 The difference between the subject-matter of dependent claim 12 and the disclosure of D2 is that in D2 the paper cover sheets are coated with copper oxine, while present claim 12 copper oxine is applied to fibres reinforcing the paper sheets. It is however obvious for the skilled person from the disclosure of D1 to apply copper oxine to coat reinforcing fibres with copper oxine as a biocide. The skilled person would thus combine the disclosure of D2 and D1 to arrive at the subject-matter of claim 12.

3.3 Dependent claims 15, 19-21, 23, 25, 31, 38 and 54 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect inventive step. The additional features included in these dependent claims are all within the normal practice of the skilled person in the field of building materials knowing the disclosure of D1-D8.